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ABSTRACT

This final report describes a project to develop, implement, evaluate, and disseminate a framework, the James Madison University (JMU) Active Learner Approach, for course-specific strategy assessment and tutorial instruction for 46 college students with learning disabilities or attention deficit hyperactivity disorder. Individual sections address the project's objectives, activities, the JMU Active Learner approach, project subjects, and results. On average, students improved their grade point average from 1.98 to 2.43 and were able to maintain this improvement the semester following the intervention. Quantitative factors found related to improvement were the independent use of strategies taught, type of disability, subject area of disability, and academic standing. Qualitative factors found related to improvement were the nature of the student (e.g., motivation and organization), nature of the intervention (especially course-specific strategy instruction), and the nature of the tutor. The paper recommends that the JMU Active Learner Approach using 1:1 instruction provided by specially trained tutors be available for students at the postsecondary level and describes a Web site that provides students with strategy instruction using the JMU Active Learner Approach. A student questionnaire and case studies are appended. (DB)

FINAL REPORT

A Systematic Model for Curriculum-based Assessment & Intervention for Postsecondary Students with Mild Disabilities

Model Demonstration Postsecondary Education Program for Individuals with Disabilities

Funded by
U.S. Department of Education

January 1, 1998 to December 31, 2000

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A Systematic Model for Curriculum-based Assessment & Intervention for Postsecondary Students with Mild Disabilities

ABSTRACT

The objectives of this Project were to develop, implement, evaluate, and disseminate a framework for course-specific strategy assessment and instruction for college coursework, which we entitled the JMU Active Learner Approach. The unique aspects of this approach were the sequential comprehensive framework for assessment and intervention, use of both a remedial cognitive-strategy approach and a compensatory approach of accommodations, and an underlying special education model, which included the diagnostic/prescriptive approach, strategy training, and direct instruction.

There were 46 subjects used in the study. Of these students, 41% were on probation or suspension. Students were registered in the Office of Disability Services with the diagnostic labels of either learning disabilities or ADHD.

Students were given 1:1 tutoring by graduate students in special education. The tutoring was based on the results of a questionnaire that was designed to identify the specific problems the students were having in their classes. Intervention focused on teaching the students to independently use strategies to overcome these specific problems.

Qualitative analysis of the results was conducted using a case study approach. Half the students were judged as having improved as a result of the intervention. Quantitative analysis was based on grades and GPA's for all subjects for semesters before, during, and after intervention. All statistical analyses indicated that the subjects made significant improvement in grades as a result of the JMU Active Learner Approach, and they were able to sustain these improvements after intervention. These results support the effectiveness of the JMU Active Learner Approach and course-specific strategy instruction. The JMU Active Learner Approach is being disseminated nationally through a website entitled the Learning Toolbox.

OBJECTIVES

Overall Objective

The overall objective of this project was to develop, implement, evaluate, and disseminate a systematic model for curriculum-based assessment and intervention for postsecondary students with mild disabilities (learning disabilities and/or ADHD) in different types of college/university settings (four-year comprehensive university, small four-year university, and community college). This project was directed at overcoming barriers related to ensuring success for the large number of students with learning disabilities who have recently entered postsecondary institutions (Henderson, 1998) as a result of the federal mandate of Section 504 of the Rehabilitation Act of 1973 (PL 93-11) and Americans with Disabilities Act of 1990 (PL 101-336).

Specific Objectives at the Start of the Project

In order to achieve this overall objective the following specific objectives were proposed at the start of the project.

- 1. Develop a comprehensive, systematic model of service delivery.** This model will begin with screening and move to standardized assessment, curriculum-based assessment, an individualized intervention plan for both academic and personal/social skills with emphasis on both remediation and compensation, implementation of the plan, and finally monitoring and evaluation.
- 2. Develop a framework for curriculum-based assessment and intervention for all college coursework.** This framework will be based on a task analysis

of the subskills of reading, writing, math, and study skills as well as a strategies approach.

3. **Identify a program for developing personal/social skills through support groups.** Support groups to assist with developing personal/social skills will be made available.
4. **Write a manual describing the model and curriculum-based framework.**
The manual will be written in a user-friendly manner so that concepts in the manual can be easily implemented by various service providers.
5. **Develop an Individualized Intervention Plan (IIP) for documenting a unified remedial and compensatory approach for academic and personal/social skill development.** The IIP will be comparable to the Individualized Educational Plan (IEP) used for school-aged students with disabilities, but will be specific to the academic and personal/social needs of postsecondary students with disabilities.
6. **Implement the service delivery model and the curriculum-based approach.** The model will be implemented in three settings: a two-year community college, a small four-year college, and a mid-sized comprehensive university by specially trained persons with expertise in special education. Then, services will gradually be transitioned from specially trained tutors to persons generally found to be working within the structure of postsecondary institutions.
7. **Evaluate the model and the framework.** Both formative and summative evaluation will be used. Outcome data, such as retention and grades, will be

collected. In addition, the efficacy of the model and framework will be analyzed in different postsecondary settings, by different service providers, and for different types of students (LD vs. ADHD).

8. **Disseminate the results of the project.** The results of the project will be disseminated through publications, conference presentations, and a national conference to be held during the final year of the project.

Final Specific Objectives used throughout the Project

At the start of the project, it became evident that not all the objectives could be studied, and that some of the objectives would have to be modified if they were to be studied effectively. The first two objectives on developing a service delivery model and a framework for curriculum-based assessment and intervention were included in the final Project objectives. The third objective on support groups could not be systematically examined because of the limited interest of the students in such groups. Every semester of the Project, a support group was offered to the students through the JMU Office of Disability Services. E-mails were sent to all students with the diagnoses of learning disabilities and ADHD informing them of the time and place of the support group meetings. Few students participated making it impossible to examine the objective concerning support groups. Some reasons given by students for lack of participation were limited time availability, not wanting to deal with their disability in the college setting, and beliefs expressed by the students that they knew enough about their disabilities. For students who had recently been identified as having a learning disability or ADHD, participation in the support group as a way of understanding their disability

was encouraged; however, such students did not choose to participate. They appeared to want the diagnosis, but not an understanding of its impact.

We did not write a manual describing the framework as projected in the fourth objective. Rather, we developed a website fully describing all aspects of the project, including the framework. So this objective was met through a means other than a manual.

At the start of the project, we began development of an IIP, but did not continue with this because of the more informal nature of the intervention plan. Therefore, we did not study the fifth objective relative to the IIP.

Most of the project was devoted to objectives 6 and 7 in which we implemented and evaluated a service delivery model and curriculum-based approach. We changed the name of the approach because of the confusion with curriculum-based approaches that are used in elementary and secondary schools (Fuchs & Deno, 1991). We decided to use the terminology **course-specific strategy instruction** because it more aptly fit the nature of the intervention that we were providing. In addition, we incorporated concepts used in special education at the school level into our approach making it unique at the postsecondary level. We called our course-specific strategy instruction approach the **JMU Active Learner Approach** to differentiate it from other types of strategy instruction used at the school and the postsecondary levels (e.g., the learning strategies approach developed by Deshler and his colleagues, 1993).

Although we did study objective 6, we did not examine the part of this objective that had to do with implementation of the approach in the three different settings of a large university, small college, and community college. We were not able to enlist

enough students from the small college or the community college. These two sites had few students who had been identified as having mild disabilities so there was a limited pool from which to select students. In addition, a number of the students at the community college attended school part-time and/or worked which made it difficult for those who were interested in the Project to participate. In addition, it was not possible to study the part of objective 6 that had to do with transition in tutoring by the specially trained graduate students to service providers in the postsecondary settings. There were no staff members who had the time or expertise to provide the tutoring.

We disseminated the project results through conference presentations which were projected in the last objective. We made presentations at three annual conferences of the Learning Disabilities Association (LDA), one annual conference of the Council for Exceptional Children (CEC), and two annual conferences of the Association for Higher Education and Disability (AHEAD). We decided not to hold a national conference because of the limited number of people we could reach. Instead, we developed a website as a means for disseminating the results more widely than would be possible through a conference.

The following specific objectives were studied throughout the three years of the Project.

1. **DEVELOP a framework for course-specific strategy assessment and instruction for college coursework (the JMU Active Learner Approach).**
2. **IMPLEMENT course-specific strategy assessment and instruction using the JMU Active Learner Approach.**

3. **EVALUATE course-specific strategy assessment and instruction using the JMU Active Learner Approach.**
4. **DISSEMINATE course-specific strategy assessment and instruction using the JMU Active Learner Approach on-line.**

Unique Aspects of the Project

As the work on the project progressed, certain unique aspects of the approach evolved. First, the use of a sequential, comprehensive framework for assessment and intervention is not usually found in postsecondary settings, but rather in school-aged settings. We applied this approach to the postsecondary setting to determine whether it could be effective.

Secondly, the use of **both** a remedial cognitive-strategy approach and a compensatory approach of accommodations and modifications is rarely found at the postsecondary level. The compensatory approach of accommodations is universally used at the postsecondary level because services at this level are based on the federal mandate of Section 504 of the Rehabilitation Act of 1973 (PL 93-112) which requires the provision of accommodations. In a review of 26 articles on postsecondary education for students with learning disabilities, Mull, et. al (2001) found that 65% of the articles mentioned the need to provide learning strategies instruction to such students. However, an examination of most programs for such students would find little instruction in this area. This is due, in part, to the dearth of postsecondary personnel trained in remedial instruction. It is also due to the conviction held by some that remediation cannot be successful with older individuals with disabilities.

The third unique aspect of this project was the use of a special education model, including the diagnostic/prescriptive approach, strategy training, and direct instruction at the postsecondary level. These three aspects of the special education model are usually found at the elementary and secondary school levels, but not at the postsecondary level. At the secondary level in particular, the systematic strategy instruction that is a basic component of the JMU Approach has been strongly supported by research (Carnine, 1997; Lenz, Ellis, & Scanlon, 1996; Mercer & Mercer, 1998; Swanson, 1999).

The fourth unique aspect of the Project was the use of qualitative and quantitative data for evaluating the effectiveness of the approach. Quantitative analysis included longitudinally (up to four consecutive semesters) measuring and comparing the subjects' performance in their coursework, as demonstrated by GPA's and other performance indicators, before, during, and after they participated in strategy instruction. The qualitative approach involved use of case studies in which the performance of each of the subjects was analyzed by the Project staff.

PROJECT ACTIVITIES

The following activities were conducted in order to study each of the four final objectives.

1. The Project staff developed the **JMU Active Learner Approach** based on a task analysis of specific skills in the following eight areas: organization, study skills, test taking skills, note taking skills, reading, writing, math, and advanced thinking. Once these specific skills were identified, a model of assessment and intervention for each skill was identified so as to apply the diagnostic/prescriptive approach. In addition, steps for integrating direct instruction into the basic instructional approach to be used by the tutors were developed.
2. The Project staff developed a questionnaire to obtain in-depth information from students in relationship to how they were meeting specific course demands in each of these eight areas. This questionnaire (shown in Appendix A) was designed to supplement the information obtained from formal diagnostic evaluations by providing information on how the students were performing relative to the day-to-day demands in the courses they were taking.
3. Graduate students enrolled in the JMU Special Education Program were trained as tutors by the Project staff. A total of 18 tutors were trained over the five semesters of the Project intervention. Weekly staff meetings were held where the Project staff provided supervision to the tutors concerning their instruction they were giving their students.
4. Assessment and intervention was provided to 46 subjects over five semesters. Of these 46 students, 32 received one semester of intervention and 14 received two

semesters making for a total of 60 interventions. Students who had the diagnoses of learning disabilities or ADHD and were experiencing academic difficulties were asked by the Director of the Office of Disability Services if they wanted to participate in the Project. If they verbally agreed, they were then asked to sign an informed consent form. Then their names were given to the Project staff. A number of students who agreed to participate in the Project did not follow through when told they had to attend weekly instructional sessions and be active participants in the intervention plans. In addition, there were a number of students who started the intervention, but did not continue because they wanted the tutor to do the work for them and/or because they did not want to put in the work necessary for mastery of the strategies being taught.

5. For students who agreed to participate, a tutor was assigned. Then the tutor examined the student's files and met with the student to fully explain the Project and solicit commitment to implementing the strategies that they were to be taught. At the first meeting, the tutor administered the questionnaire. The results of the questionnaire were discussed by the tutor and the Project staff. Then an intervention plan was developed to teach strategies to the students to improve their performance in their coursework. Tutor and student met individually either once or twice weekly. Tutors kept logs of their intervention sessions to document the amount of contact time, the strategies used, descriptions of instruction on the strategies, application to class demands, and evaluation by students and tutors. At the end of the semester, both the tutor and student completed evaluation forms.

6. Tutors reviewed the literature to identify strategies that were appropriate to the specific needs of the students. When no published strategies were found, strategies were developed by the students and the Project staff. Most strategies found in the literature had to be modified to the needs of the students. Such modifications were made by the students and Project staff. In all cases, strategies were modified or developed to meet the specific learning characteristics and course demands of the individual student. The final strategies used on the Project are disseminated on the Learning Toolbox website described below.
7. Based on qualitative analysis of student performance, case studies of all subjects were written by the Project Director. Analysis of student outcomes was based on weekly discussions of the students, tutor logs, and evaluation forms completed by both the tutors and the students.
8. Statistical analysis was based on the subjects' grades and other outcome data for quantitative analysis of the results of the study. The following information was obtained from student transcripts: student cumulative GPA, student semester GPA, academic standing, and specific grades in courses for which strategy instruction was provided. GPA's and grades were obtained for semesters prior to Project participation, during participation, and after participation. These multiple sources of outcome data served as the primary indicators of the long-term effectiveness of the JMU Active Learner Approach.
9. A web site to disseminate the JMU Active Learner Approach to three groups, students, teachers, and parents, was developed. The website enables students with learning disabilities and ADHD to understand their disabilities using a checklist and

to train themselves to use the strategies that are described. Strategies for the eight areas of organization, test taking, study skills, note taking, reading, writing, math, and advanced thinking are provided on the website. The checklist is a scaled-down version of the more detailed questionnaire developed for the Project. The website is also designed for teachers and service providers and includes detailed directions for use of the JMU Active Learner Approach. It is also designed for use by parents who want to help their children master the strategies on the website. The website can be accessed at <http://etv.jmu.edu/learningtoolbox>. A Steppingstone of Technology in Innovation grant has been awarded to JMU from 9/01 to 8/03 to field test this website with secondary level students with mild disabilities so that they can be successful in meeting rigorous high school requirements for participation in the general education curriculum and be better prepared to attend postsecondary institutions.

THE JMU ACTIVE LEARNER APPROACH

Steps in the JMU Active Learner Approach

The framework underlying the JMU Active Learner Approach includes the following steps.

1. A comprehensive history of the student with emphasis on past diagnostic labels, school history, special education services, and medication is the starting point of any evaluation that leads to an understanding of the needs of an individual student.
2. Standardized intelligence test, academic achievement, and other test scores as well as the diagnostic label that were submitted as documentation of the disability to the Office of Disability Services are examined.
3. The JMU questionnaire as well as informal interviews are used to obtain information about the student's current educational needs in meeting the demands of specific coursework. The student and tutor review the courses the student is presently taking for the purpose of identifying course demands and the student's current performance.
4. The tutor and the student meet so that they can discuss the results of the history, documentation, and questionnaire. An important outcome of this meeting is increased self-understanding by the students of their learning strengths and weaknesses.
5. At this meeting, the accommodations available to the student are discussed. The tutor needs to determine if the student is requesting these accommodations and whether the student has self-disclosed his/her disability to professors.
6. The tutor and student identify the course or courses they will work on as well as the manner in which the student's learning characteristics and specific course demands

either do or do not complement each other. The student must agree to actively participate in learning and applying these strategies to meeting course demands.

7. The tutor teaches the student how to use the strategies using direct instruction with teacher modeling, guided practice, and independent practice.
8. The tutor monitors the student performance to ensure master of the strategies. If the student does not master the strategies, consultation with Project staff is conducted to identify factors behind this and to chart a change in the intervention plan.

Model Underlying JMU Active Learner Approach

The model shown in Figure 1 graphically displays the model underlying the JMU Active Learner Approach. With this approach, self-understanding must be the basis for the student's participation in the instructional process. This self-understanding starts with the tutor's discussion with the student regarding past history, documentation, and questionnaire results. This quest for self-understanding evolves further as the tutor and student work together on the intervention plan.

Another aspect of this model involves remediation of the student's academic problems. This is based on student understanding of the course requirements. Obviously, if students do not understand the course requirements, they cannot meet them.

If a student has problems in organization (including both time and materials management), study skills, test taking skills, or note taking skills, these are given priority in terms of instructional attention. If a student is not devoting adequate time to studying, then this must be treated first. Once problems in these areas are successfully remediated, then problems in reading, writing, math, and advanced thinking become the focus on instruction.

THE PROJECT SUBJECTS

Table 1 presents demographic data for the subjects. Of the 46 subjects, 32 received one semester of intervention and 14 received two semesters. For qualitative statistical analysis there were a total of 60 interventions which were analyzed. In terms of gender, 60% were males. Of the 46 subjects, 35 (76%) attended JMU, 4 (9%) attended a community college, and 7 (15%) attended a small private college. It was not possible to analyze the performance of the subjects across these three school settings because of the limited number of subjects at the community college and small college. The limited number at the community college was attributed to the small number of students with disabilities identified at the school as well as the limited services offered. The limited number at the small college level was due to the small numbers of identified students.

Of the 46 students, 59% were in good standing academically; 33% on probation, and 9% on suspension. All students on probation and suspension attended JMU. Students who had been suspended were allowed to re-enter provided that they participated in the Project.

Table 2 presents the disability labels for the subjects. These labels are based on the documentation submitted to the Office of Disability Services. Most (74%) had some type of learning disability, and 39% had some type of ADHD. Half the students had more than one diagnostic label.

Intelligence and academic achievement test data for the subjects are shown in Table 3. These scores were obtained from the documentation files. Analysis revealed wide variability in terms of the numbers of students for whom various test scores were available and the types of tests used for documentation. Documentation was not

consistent from one student to the next, and for each student subtest scores for particular achievement and aptitude areas were reported in isolation (i.e., all subtests on a particular test were not administered).

The WAIS-R IQ scores indicate that the subjects were in the average range for IQ, with the Performance IQ being slightly higher than the Verbal IQ. Their scores for Broad Reading, Word Identification, and Comprehension on the Woodcock Johnson Tests of Academic Achievement were in the average range. The Woodcock Math scores show that the subjects performed better in Applied Problems than in Calculation. On the Woodcock Writing scores, the subjects performed at a lower level than on Reading or Math. This was due to the mean of 84.18 on the Dictation subtest. This mean score is the only score that is one standard deviation below the mean and represents spelling problems that are frequently found in individuals with learning disabilities.

RESULTS

Sources of Data

The following sources of information were used for both the qualitative and quantitative analyses of the results.

1. Office of Disability Services documentation including test results and diagnostic classification. These data were used for the demographic analysis of intelligence and academic achievement test results. The diagnostic classifications were used to place students into the learning disabilities, ADHD, or other categories. It should be noted that there was a great deal of variability in the test results that were included. Although the Woodcock Johnson Test of Academic Achievement was most frequently used, other tests were used as well. Some psychologists only gave a few of the Woodcock Johnson subtests. In the reports there was little analysis of the test results using frequently used school criteria for diagnosing learning disabilities (e.g., severe discrepancy between ability and achievement) (Lerner, 2000).
2. JMU Learning Questionnaire/informal student interviews. These sources yielded information on the specific nature of the students' academic problems and provided the basis of the intervention.
3. Tutor Evaluation Forms completed at the end of the intervention. Tutors were asked to rate the students with whom they worked on the basis of independent mastery of the strategies taught.
4. Student Evaluation Forms completed at the end of the intervention. Students completed evaluation forms that were given directly to the Project Director so

that the tutor would not see the students' ratings. Students were asked to rate the tutor and the intervention in terms of whether they were helped.

5. Tutor Teaching Log completed by the tutor for every tutoring session. These logs were like lesson plans and allowed the Project staff to see the nature of each of the tutoring sessions.
6. Strategy Summary Sheets. These were descriptions of the specific strategies used and how they were applied to course requirements. They were completed by the tutors for each strategy they used with each subject.
7. Student transcripts. Transcripts served as the source of all grades and were used as the major determinant of the outcomes of the Project.
8. Student performance products (e.g., term papers, tests). These work samples were analyzed to determine how well students were applying the strategies independently.

Qualitative Analysis

Qualitative analysis of each subject's performance was conducted as a way of identifying the benefits of the JMU Active Learner Approach for *individuals*.

Quantitative analysis considers group performance, and consequently obfuscates individual performance. In order to identify how each individual fared through the course of the Project, comprehensive case studies were written for each student by the Project Director. Summaries of these case studies for the 60 interventions are shown in Appendix B. Students who received two semesters of intervention were listed as separate interventions. For each case, there is the following information: school attended, gender, academic status (good standing, probation, or suspension), disability label, results of the

questionnaire, test scores, nature of the intervention, GPA and course grades to represent outcome data, the decision as to whether there was significant improvement or not, and follow-up data. The decision as to whether a student improved or not was based on the student's grades in targeted courses, tutor evaluations, and student evaluations. In some cases, a student's grades improved in the targeted course, but the tutor reported that the student did not use the strategies taught. In such cases, it was decided that the student did not improve because the higher course grade was due to factors other than the intervention.

Of the 46 subjects, 23 improved (50%) and 23 did not. For the 19 students who were on probation or suspension, 9 (47%) improved and 10 (53%) did not. These results are quite positive for both groups, but especially for the latter group because they were in dire academic straits and it was possible to "save some of them." The degree of success attained by some of the students can be seen in the quote from one of the student's professors. The student had self-disclosed to the professor and had informed him of the special tutoring she was receiving. She received an A in the professor's course and went from a GPA of 2.5 to 3.2. The professor wrote the following on one of her tests:

"Nothing makes teaching more worthwhile than for a student to show the type of progress you show here. Thanks for your persistence and congratulations to your and your tutor."

Quantitative Analysis

Overall Progress. The major outcome measures used were GPA's for specific semesters as well as overall GPA's. Overall growth for subjects was represented by their GPA prior to their participation in the project as compared to their GPA for the semester of participation. These results are shown in Figure 2. It can be seen that the subjects'

Semester GPA prior to the project was 1.98 (on a 4.00 scale). The Semester GPA for the group for the semester of their participation was 2.42 and for the semester after completion of the intervention the Semester GPA was 2.43. Their Overall GPA went to 2.22 for the semester of participation and 2.36 for the semester after completion of intervention. These differences were significant at the .002 level. The results indicate that the subjects benefited from the JMU Active Learner Approach as reflected by the improvement in their grades. In addition, they were able to maintain this improvement for the semester following intervention.

The data in Figure 3 represent the subjects' performance in courses relative to the focus of the course-specific strategy instruction. The GPA for the students in previous courses in the content area of the intervention was 1.72, while their GPA in their courses in this same content area after intervention was 2.26. This means that if a student had difficulty in history, his GPA in previous history courses was analyzed in comparison to his grade in the history course that was the focus of the strategy instruction. The differences between these average GPA's was significant at the .000 level indicating that the JMU Active Learner Approach was successful in improving student performance in specific targeted courses in which they had difficulties.

Variables Related to Improvement. The following factors related to these overall significant results were examined: independent use of strategies, type of disability, subject area of disability, and academic standing.

The results for independent use of strategies by the students are shown in Figure 4. The 46 subjects were divided into two groups, one which was judged to use the strategies independently after intervention and the other which was judged not to use the

strategies. These judgments were based on both Tutor and Student Evaluation Form results. The group that was judged as using the strategies independently had a prior Semester GPA of 1.96 as compared to prior Semester GPA of 1.68 for the group that was judged as not using the strategies independently. After the semester of intervention, both groups improved, but the group that used the strategies independently did so to a significantly greater extent ($p < .02$). They obtained a Semester GPA of 2.72 as compared to 2.07 for the non-independent use group. The GPA's for both groups dropped after one semester of intervention, but there continued to be a significant difference ($p = .03$) between the groups with the use group obtaining a 2.37 GPA and the non-use group obtaining a 1.95 GPA. These results indicate that independent use of the strategies taught was a major variable in student improvement as measured by GPA. In other words, students who were able to independently apply the strategies they learned to their coursework (without the guidance of the tutor) showed significant improvement in their academic performance while receiving tutoring as well as the semester after tutoring.

The type of disability was another variable analyzed in relationship to improvement. The results for this variable are shown in Figure 5. There was a significant difference between the three disability groups prior to the intervention with the LD group having the lowest GPA the semester prior to tutoring (1.59), the ADHD group the next (1.93) and the combination group (LD/ADHD) group the highest (2.22). Following intervention all three groups improved, but the same relationship between them existed. It should be noted that the LD group made a substantial jump from a Semester GPA of 1.59 prior to tutoring to an Overall GPA of 2.08 after tutoring. Therefore, subjects with all types of disabilities benefited from the intervention. Even

though students with the diagnosis of LD had the lowest grades, they were still benefited from the intervention.

The subject area of disability was another area examined. These data are in Figure 6. The group with disabilities in writing had the lowest GPA the semester prior to tutoring (1.63), followed by disabilities in multiple areas (1.98), reading (2.13) and finally math (2.21). After intervention, all increased, but the groups with disabilities in writing and multiple areas improved the most. The growth curves for the groups are shown in Figure 7. Students with disabilities in writing and multiple areas made significant improvement and ended at comparable levels to the other groups.

Academic standing was another variable examined. Students who were in good standing were contrasted with those on probation or suspension. These results are shown in Figure 8. There was a significant difference between the GPA for the good standing group (2.37) and the probation group (1.52) for the semester prior to intervention. Both groups improved and there continued to be a significant difference between their GPAs. These data indicate that students on probation or suspension did benefit from the intervention, their Semester GPA increasing from 1.52 to 1.92, and their Overall GPA moving to 1.97. It is important to note that a GPA of 1.97 is close to the 2.0 GPA required for good standing. The growth curves for both groups are contrasted in Figure 9. Both showed a similar pattern of improvement.

Summary of statistical analysis. The analysis of student grades before and after intervention indicates that as a group the students significantly improved their academic performance. In addition, they were able to maintain this improvement after intervention was over. This improvement was noted for students who were in good standing as well as

those on probation or suspension. Specifically, their performance in the courses that were targeted for intervention significantly improved. Analysis of the case studies led to comparable conclusions; half of the students, including those on probation and suspension, made significant improvement as a result of the intervention. Both the qualitative and quantitative analyses of the results provide support for the course-specific strategy instruction of the JMU Active Learner Approach. Students with the diagnostic label of learning disabilities had the lowest GPA of all groups prior to intervention, but like the other groups, they were able to show significant improvement. Students with disabilities in writing and multiple areas had the lowest GPA prior to intervention, but were able to improve as much as students with disabilities in other subject areas. These results indicate that students with all types of diagnostic labels and disabilities in various subject matter areas benefited from the intervention provided by the JMU Active Learner Approach.

DISCUSSION

Based on both the qualitative and quantitative analyses of the results, it can be concluded that the students who received the JMU Active Learner Approach significantly improved their academic performance as reflected in their higher GPA's and grades in the courses with which they were having difficulty. In addition, the JMU Active Learner Approach was effective with college students with severe academic problems who were on probation and suspension. It was effective with students with both learning disabilities and ADHD as well as students with disabilities in various subject matter areas. In addition, this improvement was sustained over time.

These results provide strong support for the various aspects of the JMU Active Learner Approach. First, they support the importance of providing **course-specific strategy instruction** so that students are guided to use strategies to overcome the specific problems that they are experiencing. Some strategy instruction approaches are general; i.e., they teach the students strategies, but the students are left to discover how to apply them to the specific demands of their courses. The subjects reported having had such general strategy instruction in the past and that it did not help them because it didn't "show them" how to apply these strategies to specific tasks. They may have had instruction on test taking strategies, but the instruction did not focus on helping the students with answering essay questions for their philosophy course or taking lengthy multiple choice tests in their psychology class. In addition, much of strategy instruction is time limited (e.g., a two-week workshop on study skills). The intervention provided in this project was over one or two semesters. Prolonged, intense intervention seems to be one of the aspects that led to improvement in the students.

What is particularly encouraging about the results of this study is the finding that the students were able to maintain their improvement over time. They had incorporated the strategies into their approach to learning and were able to generalize them to new course challenges. This result is inconsistent with other studies of school age students who were taught strategies, but were unable to generalize them (Mastropieri & Scruggs, 2000). We attribute the difference between our results and the results of others to the nature of the instruction provided. The 1:1 intervention over a full semester is more intense intervention than used in most studies of strategy generalization. This ability to generalize is attributed, in part, to the **direct instruction** component that was incorporated into the JMU Active Learner Approach. With direct instruction, the tutors modeled a particular strategy, provided guided practice where the students were monitored in their attempts to apply the strategy to specific coursework, and then were given opportunities to independently practice the strategy.

These results also support the use of the **diagnostic/prescriptive approach** where the students' specific problems are identified through informal questionnaires or interviews. It is not possible to design course-specific strategy instruction without knowing how the students are doing on the various academic demands of their classes. Assessment for students in need of strategy instruction must incorporate more than test scores and diagnostic labels; it must provide information on how the students learn relative to the demands of their classes. This can only be gleaned from having the students analyze their performance in relationship to the demands being made in their classes.

Based on the qualitative analysis of the results, three factors emerged as being related to student improvement. These factors involved the nature of the student, the nature of the intervention, and the tutor.

Nature of the student. In the qualitative analysis of the results using the case study approach, characteristics of students who improved as opposed to those who did not improve involved the following seven factors.

1. *Motivation.* Motivation to succeed academically was probably the most important factor in student success for the college students in this study. Students with high motivation for academic success showed greater improvement than students who didn't care about their academic status. Highly motivated students were willing to work harder and longer than their non-disabled college peers. Some students reported that they were more interested in sports or social life than academics. In some cases, they stated that they were in college only because their parents wanted them to be. Students with low motivation often complained that it wasn't fair that they had to study when other students did not have to study to get good grades. They were not willing, or able, to put in the extra work that is necessary for academic success for college students with mild disabilities. In some cases, students with high motivation were able to achieve higher grades than some students with low motivation who had higher intelligence test and academic achievement test scores.
2. *Organization.* Students who were able to organize their time and materials were much more likely to be successful than students who were disorganized. Some students refused to use planners and repeatedly lost the notebooks where they kept their JMU Active Learner Approach strategies. One student said that he didn't need a

planner because he put post-it notes around his room as reminders. His academic performance clearly indicated that this was not working. In some cases, disorganized students expressed a desire not to change. They liked themselves the way they were, and didn't want to become "a different person" even though it might help them achieve better.

3. *Independence.* Students who were able to become independent in their use of strategies were successful as opposed to students who demonstrated learned helplessness. The latter students seemed to want the tutors to do their work. They had managed to have others do their work for them in the past (e.g., parents, teachers, and past tutors). They resisted attempts to become independent, and in some cases dropped out of the Project because they perceived their participation required too much work of them.
4. *Use of accommodations and self-disclosure.* Students who disclosed their disabilities to their professors and used appropriate accommodations were more likely to be successful. Some students did not want to disclose to their professors and did not want to use accommodations. They wanted to see if they could make it on their own. They felt that they would be stigmatized by self-disclosing. In some cases, they waited too long to ask for accommodations, and were not able to benefit from accommodations once they self-disclosed. At the other end of the spectrum, there were students who were too dependent on the accommodations they were receiving and resisted attempts to work on improving performance in their disability areas. In one case, a subject with a reading disability stated that he did not want to improve his reading because he got his books on tape as well as other accommodations that did

not require him to read. However, after one semester of working on improving his reading, he changed his mind. He experienced success and was motivated to continue working on improving his reading.

5. *Use of many resources.* Students who sought services from the various resources on campus were more likely to improve than those who did not. Students who sought help from the Writing and Math Labs, course-specific tutors (especially in math), friends, and family were able to assemble a network of support that enabled them to better meet the academic demands of their coursework.
6. *Cognitive and academic achievement levels.* Some of the students had low cognitive levels as measured by IQ and/or low academic achievement levels. In some cases, these low levels prevented the students from mastering the advanced academic content of the postsecondary level. Some of the students did not seem to have the cognitive ability to understand the abstract nature of their course content.
7. *Emotional problems and problems with medication.* Some of the students had significant problems with depression and anxiety. These problems overshadowed their academic problems. In some cases, they refused to get treatment or medication for their problems. In other cases, they did not take their medication. There seems to be limited recognition for the need to provide support for students with emotional problems who are also labeled as having a learning disability or ADHD.

Nature of intervention. The following aspects of the intervention seemed to be factors that contributed to the success of the JMU Active Learner Approach: course-specific intervention; 1:1 intervention; semester long intervention; emphasis on independent use of strategies, and match of strategy to cognitive style of student.

1. *Course-specific strategy instruction.* Students repeatedly reported in the final Student Evaluation Forms that what they found most helpful about the intervention was the tutor modeling how to apply strategies to specific course demands. For example, if they were having difficulty studying for a multiple choice test, previous tests from that course were used to demonstrate how they might apply the strategy CRAM which is designed to help students improve their abilities to take multiple choice tests. The combination of strategy instruction and applying it specifically to the course content appears to be the critical variable.
2. Many students identified the *individual sessions* with the tutor as being very helpful. Providing 1:1 instruction seems to be important for tailoring the intervention to the student's specific needs and establishing a positive tutor-student relationship.
3. Providing *semester long intervention* allowed the tutor to provide instruction relative to all the course requirements starting with understanding the syllabus and ending with taking the final exam. One or two semesters of intervention also allowed time for mastery of the hard-to-learn strategies and incorporation into the student's behavioral repertoire.
4. The 1:1 relationship over a semester also allowed the tutor to get to know the student well and to *match strategies to the student's cognitive style*. For example, one of the students had strong visual abilities which the tutor used to help her study for very complex objective tests in music history. The tutor

introduced graphic organizers and color coding which helped the student visually organize the information.

Nature of Tutor. The final factor that was related to student improvement involved the tutor. Some of the students established a very strong relationship with their tutors. In some cases, they stated in their Evaluation Form that they continued with a course or continued staying in school because of the relationship with the tutor. They said that *their tutor believed in them* so they knew that they could be successful. This strong tutor-student relationship was enhanced by the graduate student status of the tutors. They were not teachers or professors. They were not peers. They were students who were slightly older and more experienced than the subjects, but they still were students and of the same general age group. This seemed to have significance for these college student subjects.

Another aspect of the tutor variable that contributed to success for the students was the teaching expertise of the particular tutor. This was difficult to quantify; however, the Project staff recognized that some of the tutors were excellent teachers and were more effective in providing the JMU Active Learner Approach. Others were more limited and had difficulty in presenting the Approach, despite having the same training as the "good" tutors. This is an important variable, but one that is difficult to isolate and study.

RECOMMENDATIONS

The first and foremost recommendation is that the JMU Active Learner Approach using 1:1 instruction provided by specially trained tutors should be available at postsecondary levels. However, we recognize that this recommendation will be exceedingly difficult to put into practice for three reasons. First, the emphasis at the postsecondary level is on accommodations, and not on remediation. There is the unspoken belief among many who work with individuals at this level that people can't change their disabilities. The results of this study indicate that remediation can be successful with college students and they can change.

Another factor that will make this recommendation difficult to implement is the absence of personnel who can provide 1:1 remediation using the JMU Active Learner Approach. Along with this is the issue of funds for such personnel. Because staffing and funding issues are significant problems at the postsecondary level, the Learning Toolbox website was developed. The purpose of this website is to provide students with strategy instruction using the JMU Active Learner Approach. Additionally, the website provides information that student support personnel can use to learn to implement the approach. As stated previously, this website is being field tested nationally with high school students through a federal Steppingstone in Technology Innovation grant. The purpose of this field testing is to determine whether students can independently or with the help of their teachers master learning strategies so that they can better master the rigorous academic content of general education at the secondary level and be better prepared to master such content at the postsecondary level.

Additional research is needed to determine whether students at the postsecondary and secondary levels can learn the JMU Active Learner Approach without 1:1 instruction, but rather through the web. Second, research is needed that evaluates the extent to which web resources such as the Learning Toolbox are effective instructional development delivery systems for teachers who want to implement research-based instructional approaches such as the JMU Active Learner Approach. Third, research is needed that evaluates why some students refuse to self-disclose and not use the accommodations to which they are entitled. Finally, research is needed that evaluates why college students do not pursue special services when they are offered and what can be done to encourage them to do so.

The research in this project has demonstrated that postsecondary students with mild disabilities can be successful academically, even if they are on probation or suspension. The final word for service providers to such students is - **never give up on a student!**

Table 1
Demographic Information on Subjects
(N=46)

Number of Semesters		School			Gender		Academic Standing		
One	Two	JMU	CC	Small	Male	Female	Good	Probation	Suspension
32	14	35 (76%)	4 (9%)	7 (15%)	30 (60%)	16 (40%)	27 (59%)	15 (33%)	4 (9%)

Table 2
Disability Categories for Subjects
(N=46)

Disability Categories	N (%)
Learning disabilities	16 (35%)
Learning disabilities/ADHD	8 (17%)
Learning disabilities/other (depression, anxiety, bipolar, OCD)	10 (22%)
ADHD	7 (15%)
ADHD/Other (depression, anxiety, communication disorder)	3 (6%)
Other	2 (4%)
Total some type of Learning Disabilities	34 (74%)
Total some type of ADHD	18 (39%)

Table 3
Intelligence and Academic Achievement Test Data
For Project Subjects

Test	Mean	S.D.	N
WAIS-R Verbal IQ	105.3	14.4	39
WAIS-R Performance IQ	108.9	13.1	39
WAIS-R Full Scale IQ	106.9	14.1	35
WJ Broad Reading Standard Score	99.98	11.6	14
WJ Word Identification Standard Score	100.39	11.0	23
WJ Comprehension Standard Score	101.84	13.5	25
WJ Broad Math Standard Score	102.00	13.6	15
WJ Calculation Standard Score	93.87	13.1	23
WJ Applied Problems Standard Score	99.60	18.5	10
WJ Broad Writing Standard Score	88.27	8.7	11
WJ Dictation Standard Score	84.18	13.1	11
WJ Writing Samples	96.8	13.4	10

Figure 1

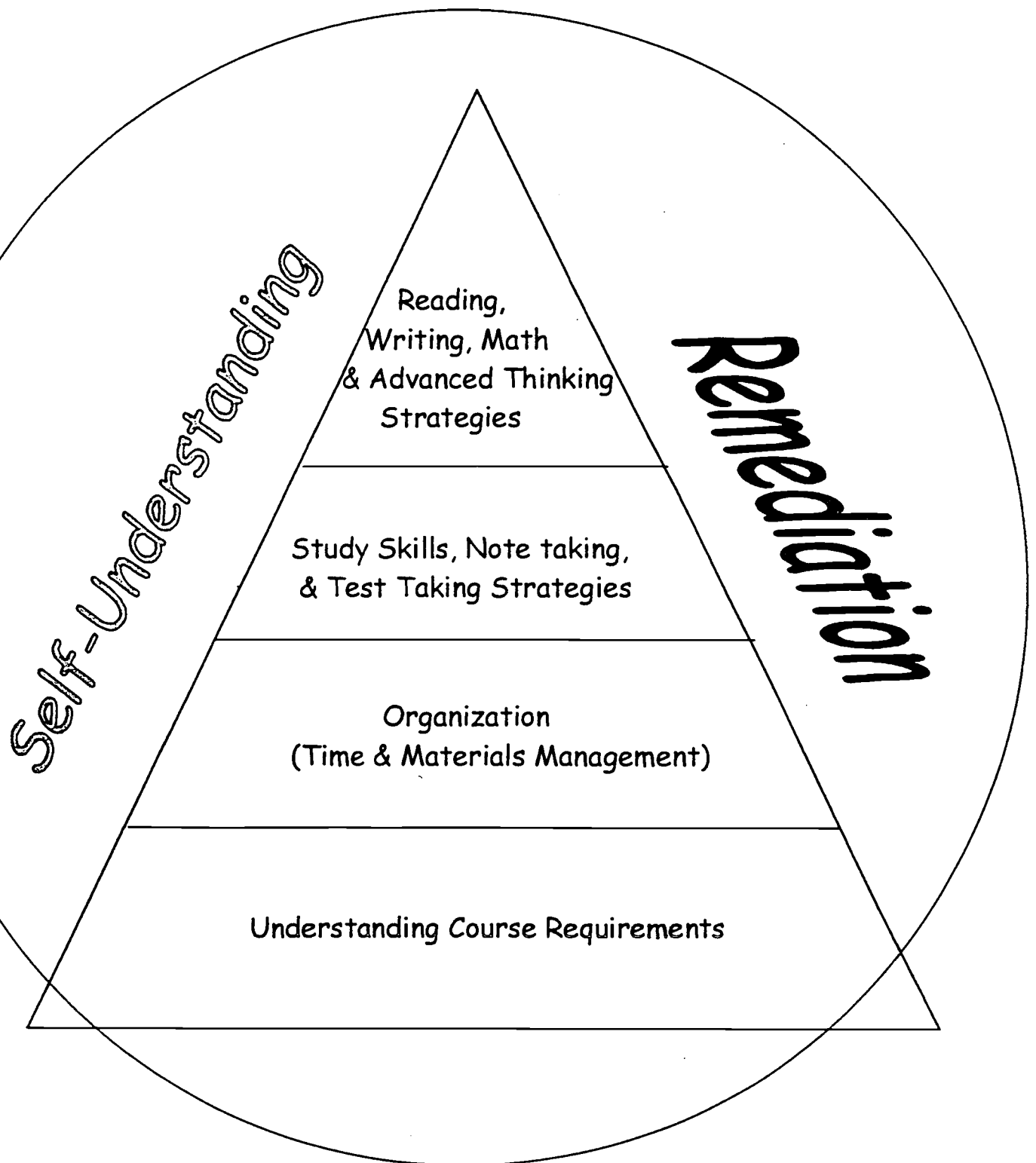


Figure 2

Overall Growth
($p < .002$)

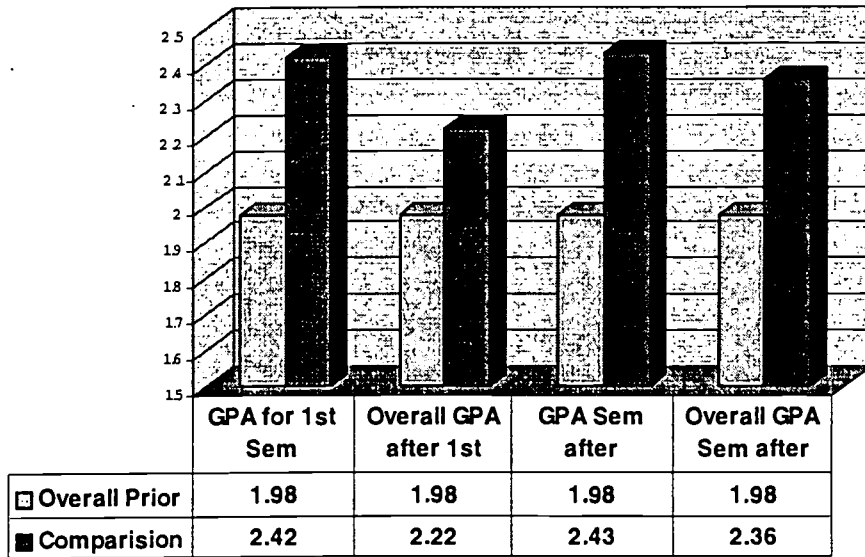


Figure 3

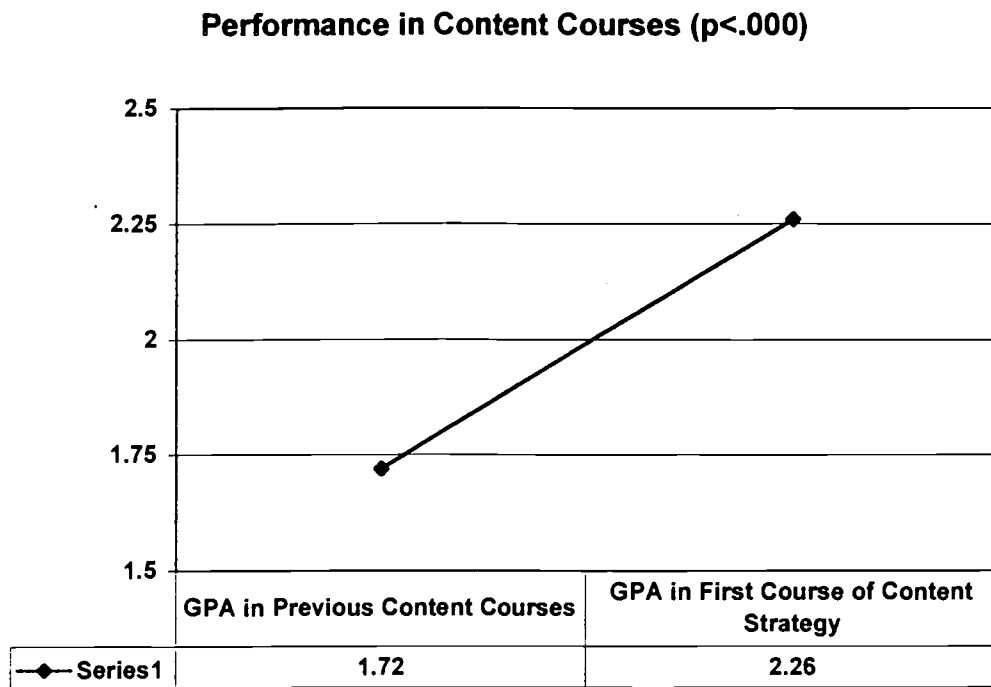


Figure 4

Independent Use of Strategies

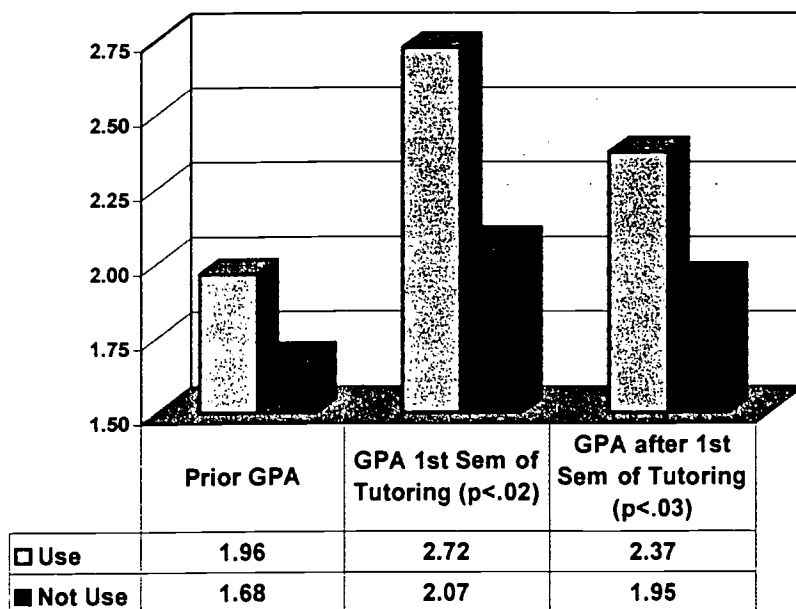


Figure 5

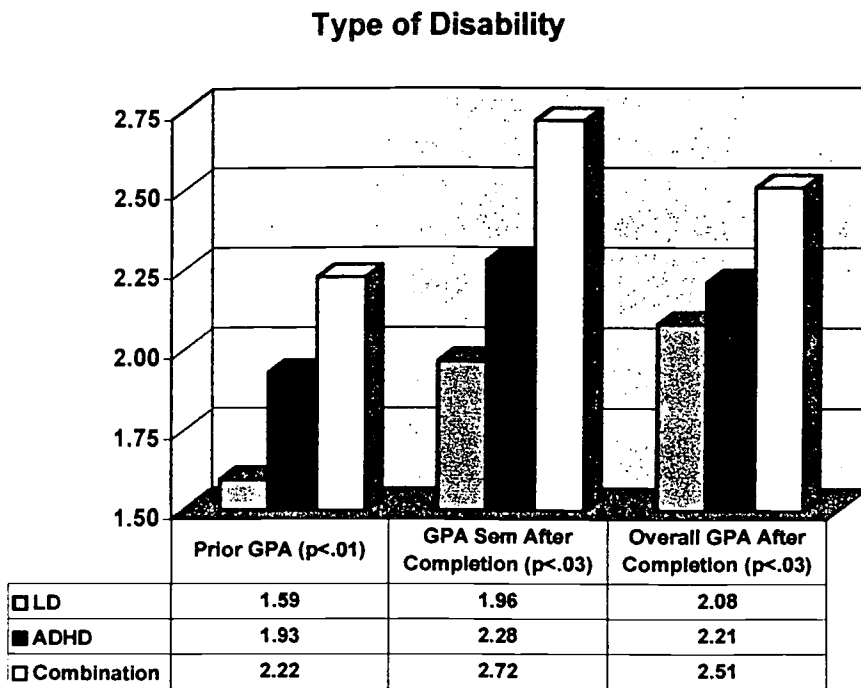


Figure 6

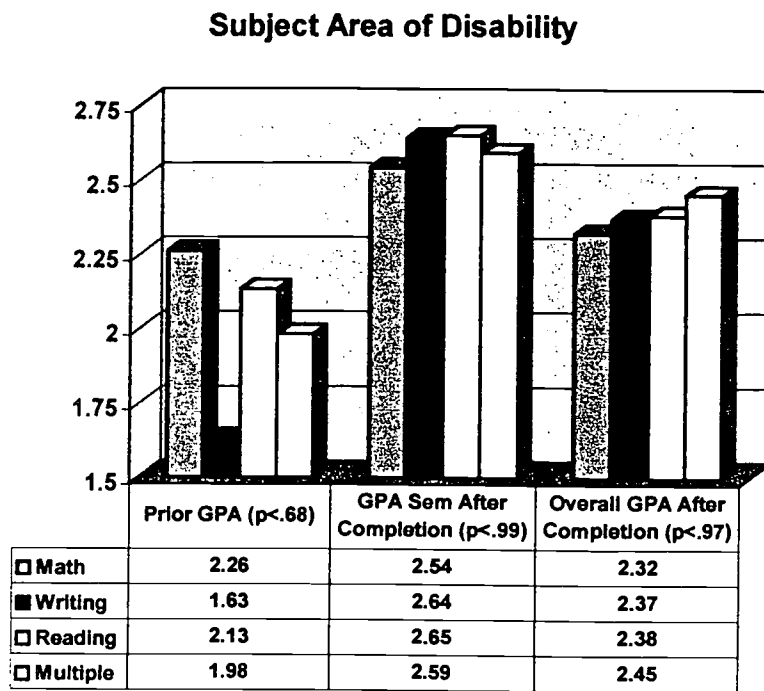


Figure 7

Subject Area of Disability

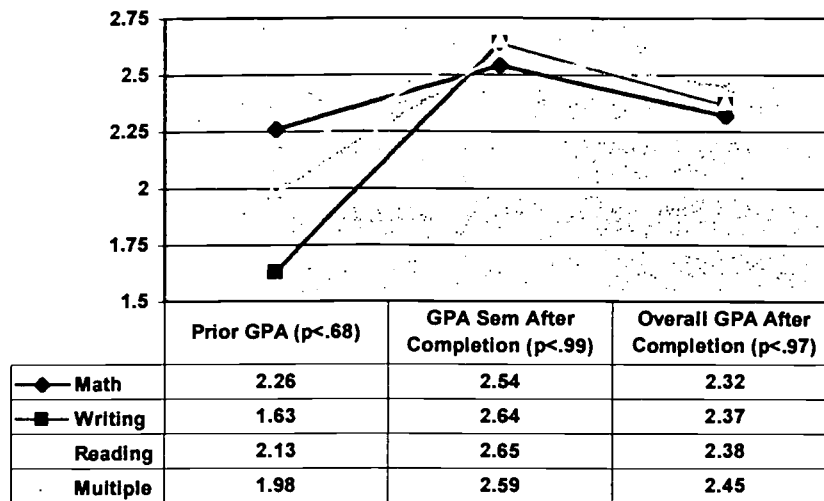


Figure 8

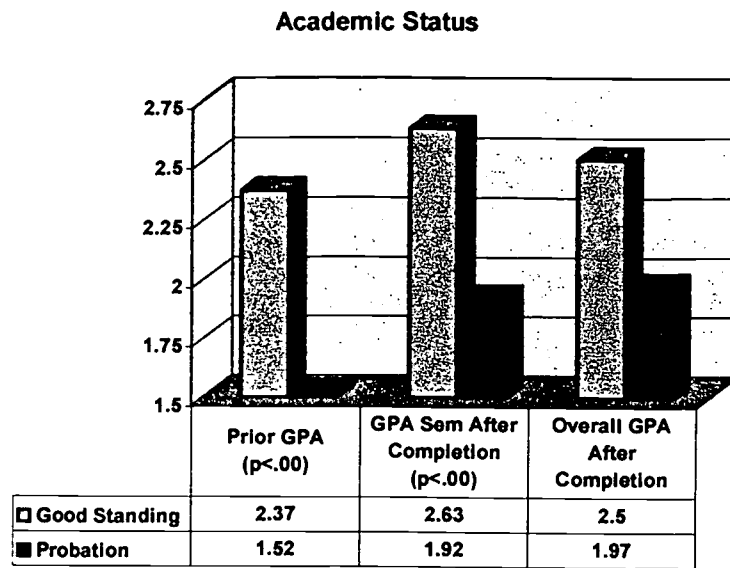
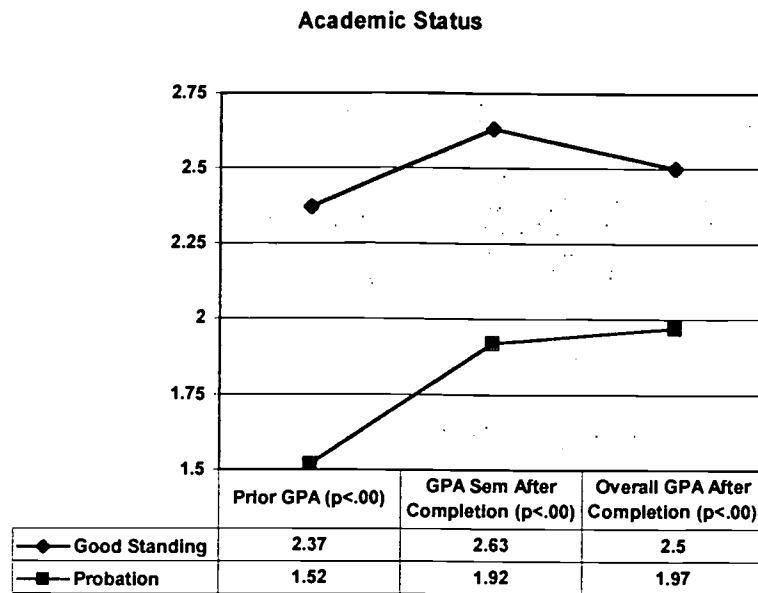


Figure 9



APPENDIX A

QUESTIONNAIRE

**JMU MODEL DEMONSTRATION PROJECT
STUDENT QUESTIONNAIRE**

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David Allsopp, Ph.D.

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A. Overall questions

A-1. In what courses do you have the most success?

A-2. Why?

A-3. In what courses do you have the most difficulty?

A-4. Why?

A-5. What do you do to try to overcome these difficulties?

A-6. Do these techniques work?

A-7. What types of assignments are easiest for you?

A-8. Why?

A-9. What types of assignments are hardest for you?

A-10. Why?

A-11. What do you try to do to help you with such assignments?

A-12. Do these techniques help?

A-13. What types of professors do you like best?

A-14. Why?

A-15. What types of professors do you like least?

A-16. Why?

A-17. Have you told your professors about your disability?

A-18. Why or why not?

A-19. Do you let your professors know who you are and what your needs are?

A-20. When?

A-21. Have you had difficulties with specific professors?

A-22. Why?

A-23. How did you resolve these difficulties?

A-24. Do you ask questions of your professors during or after class?

A-25. Do the answers help?

A-26. Do your friends know about your learning disability?

A-27. Please rate the confidence you have in being successful in your school work.

1- extremely confident, 2-very confident, 3-confident, 4-not very confident, 5-extremely unconfident

B. Study Skills: General

Now I'm going to ask you some questions about how you study.

B-1. Have you had any classes on study skills?

- B-2. Did they help?
- B-3. What study skills did you learn that you use now?

B-4. What study skills are most helpful to you?

B-5. Do you prefer small or large classes?

B-6. Why?

B-7. Do you prefer lecture or discussion classes?

B-8. Do you participate in class discussions?

B-9. Why or why not?

B-10. Do you prefer classes where the tests are based on lectures or texts?

B-11. Do you study differently for tests based on lectures than tests based on texts?

B-12. How?

C. Study Skills: Organization

C-1. Do you have a notebook for each class?

C-2. Can you easily find your textbooks, notebooks, and other classroom materials?

C-3. Why not?

C-4. Do you buy the textbooks and other required course materials at the beginning of the semester?

C-5. Do you share textbooks with other students?

C-6. Does this cause any problems?

C-7. Do you use an organizer or calendar all the time? Some of the time? Rarely?

C-8. Do you write all assignments in the calendar?

C-9. Do you lay out a study plan for each course for the entire semester?

C-10. Do you lay out a study plan to prepare for tests or assignments?

C-11. Do you carry out your study plan?

C-12. When you have an assignment, do you finish it before going onto another?

C-13. Do you keep working on an assignment steadily until it is due or do you cram to finish it?

C-14. Do you study at a regular time each week?

C-15. Do you allow enough time for preparing for a test or an assignment?

C-16. Do you keep up with assignments?

C-17. Why not?

C-18. When you sit down to study, how long does it take you to actually get started studying?

C-19. Do you study in a certain place?

C-20. Where?

C-21. Why is this the best place for you?

C-22. Do you have difficulty getting access to a study place that is best for you?

C-23. Do you prefer quiet, music, or noise when you study?

C-24. Do you study at a certain time?

C-25. Why?

C-26. Does this work for you?

C-27. When are you usually most alert?

C-28. When you study, are you easily distracted?

C-29. When you study, do you daydream or do unplanned things like talk on the phone?

C-30. Do you use any techniques to prevent you from being distracted while studying?

C-31. How many classes do you miss every week? How many over the semester?

C-32. In which courses do you miss the most classes?

C-33. Why?

C-34. Do you miss fewer classes if the instructor takes attendance?

C-35. Where do you usually sit in a classroom?

C-36. Why?

D. Study Skills: Resources

D-1. Do you find it helpful to study with others?

D-2. Are you able to arrange to participate in study groups?

D-3. Why not?

D-4. What types of accommodations do you have in your classes?

D-5. What would happen if you did not have these accommodations?

D-6. What other accommodations would you like?

D-7. Why don't you have these?

D-8. What campus resources do you use to help you (e.g., study labs)?

D-9. Do these help?

D-10. How?

D-11. Do you use private tutors?

D-12. Do they help?

D-13. Do you get help from anyone else?

D-14. Who?

D-15. How does this help?

D-16. What difficulties do you have using the library?

D-17. Can you use the electronic catalog?

D-18. What difficulties do you have using journals, encyclopedias, and other references?

E. Study skills: Lectures

- E-1. Do you have difficulties understanding lecture?
- E-2. What techniques do you use to overcome these difficulties?
- E-3. Do you take notes in class?
- E-4. Do your notes contain all the important information from the lecture?
- E-5. Why not?
- E-6. Do you copy everything from the board, overheads, etc.?
- E-7. Do your notes make sense when you read them over?
- E-8. Are your notes legible?
- E-9. Do you tape record lectures?
- E-10. Do you listen to the taped lectures while you review your notes?
- E-11. Does this help?
- E-12. Do you use other people's notes?
- E-13. Do these help?
- E-14. Do you review your notes before going to class?
- E-15. Do you review your notes continually between class meetings?
- E-16. Do you review your notes right after class?

F. Study skills: Test taking

- F-1. Do you look over the whole test before starting?
- F-2. Do you plan the amount of time to spend on each question?
- F-3. Do you have difficulties finishing tests on time?
- F-4. Do you skip over questions if you can't answer them and come back at the end?
- F-5. Do you read directions carefully?
- F-6. Do you check over your answers after you have finished?
- F-7. Do you get to exams on time?
- F-8. Do use all the allotted time for a test?
- F-9. Do you come prepared with pencils, etc?
- F-10. Where do you sit when you take an exam?
- F-11. Why?
- F-12. Do you get extremely nervous when taking a test?
- F-13. What do you do to control this?
- F-14. Does this work?

These questions are about objective tests, like multiple choice and true-false.

F-15. Do you have difficulties with the bubble scoring on computer tests?

F-16. Do you have difficulties memorizing answers for objective tests?

F-17. What techniques do you use to help you memorize?

F-18. Do these help?

F-19. Do you have difficulties deciding on the best answer on multiple choice tests?

F-20. Why?

F-21. Do you read all the choices before responding on a multiple choice test?

F-22. Do you change your answers?

F-23. Do you leave some questions unanswered?

Now let's talk about essay exams.

F-24. Do you have difficulties organizing your answers?

F-25. What techniques do you use to help you with these difficulties?

F-26. Do they help?

F-27. Do you have difficulties composing your answers?

F-28. What techniques do you use to help you with these difficulties?

F-29. Do these help?

G. Computer competency

G-1. Are you able to meet the computer demands of your classes?

G-2. Why not?

G-3. Can you use e-mail?

G-4. Can you use word processing?

G-5. Can you use the internet?

G-6. Can you take tests on the computer?

G-7. Do you have difficulties recalling the meanings of icons or the picture symbols?

G-8. Do you have difficulties recalling the steps in various computer operations?

G-9. Do you have difficulties attending for long periods of time when using the computer?

G-10. What difficulties do you have reading the computer screen?

G-11. Are you a good typist or do you hunt and peck or in-between?

G-12. Do you compose on the computer or do you hand write and then switch to the computer?

H. Reading

H-1. What difficulties do you have understanding the meaning of what you read in textbooks?

H-2. Which courses do you have this difficulty with?

H-3. Why do you think you have these difficulties?

H-4. Do you look over what you are to read before you actually start reading?

H-5. Does this help?

- H-6. While reading, does your mind wander?
 - H-7. What do you do about that?
 - H-8. Does it work?
- H-9. Do you highlight text as you read?
 - H-10. How much do you highlight?
 - H-11. Does this help?
- H-12. Do you highlight to focus your attention while reading or to use it to go back and study later or both?
- H-13. Do you take notes when you read?
 - H-14. Does this help?
- H-15. Do you read aloud to yourself?
 - H-16. Does this help?
- H-17. Does it help when someone else reads aloud to you?
- H-18. Do you re-read material to help you understand better?
 - H-19. Does this help?
- H-20. Do you have difficulty understanding the meaning of what you read with materials other than textbooks (e.g., web sites, manual directions)?
 - H-21. With what types of materials?
 - H-22. What techniques do you use to help you with this?
 - H-23. Do they work?
- H-24. Do you have difficulty reading words?
 - H-25. Do you have difficulty pronouncing the words, or understanding the meanings of words, or both?
 - H-26. Do you have this difficulty with all types of words or just words in some courses?
 - H-27. What courses?
 - H-28. What techniques do you use to help with this?
 - H-29. Do they work?

I. Writing

- I-1. Do you use a word processor when writing for your classes?
- I-2. Do you have difficulty writing papers and/or reports?
 - I-3. In what courses do you have difficulty with this?
- I-4. What types of problems do you have with writing?
 - I-5. What techniques do you use to help overcome these problems?
 - I-6. Do they work?
- I-7. Do you have difficulty organizing your ideas before or during your writing?
- I-8. Do you make an outline or do any prewriting plan before you start writing?
 - I-9. Does this help?
- I-10. Do you have difficulty with spelling?
- I-11. Do you use spell check?
 - I-12. Do you have difficulty identifying the correct choice with the spell check?

- I-13. What do you do to help with spelling when you don't have access to a spell check?
 - I-14. Does this help?
- I-15. Do you have difficulty with punctuation?
 - I-16. Do you use any aids to help you with this?
 - I-17. Do they help?
- I-18. Do you have difficulty with capitalization?
 - I-19. Do you use any aids to help you with this?
 - I-20. Do they help?
- I-21. Do you have difficulty writing grammatically correct sentences?
 - I-22. Do you use any aids to help you with this?
 - I-23. Do they help?
- I-24. Do you use grammar check?
 - I-25. Do you have difficulty selecting the correct choice?
- I-26. Do you use the dictionary?
 - I-27. Is it helpful?
 - I-28. Why or why not?
- I-29. Do you proofread for errors?
 - I-30. When proofreading, do you have difficulty finding errors?
- I-31. Do you have others proofread for your errors?
- I-32. Do you edit to change the content of your writing to better express your ideas?
- I-33. With essay exams where you have to handwrite your answers do you have difficulties with composing?
 - I-34. Organizing your answer?
 - I-35. Spelling?
 - I-36. Punctuation?
 - I-37. Capitalization?
 - I-38. What do you do to help you with these difficulties?

APPENDIX B

CASE STUDIES

JMU POSTSECONDARY GRANT
SUMMARY OF CASES

Spring, 1998 (N=11)

<i>Code</i>	<i>Disability</i>	<i>Test Scores</i>	<i>Intervention</i>	<i>Outcome</i>	<i>Comments</i>	<i>Follow-up</i>
98s1 JMU Male Academic probation	LD Extremely disorganized, no study or test taking skills. Problems with notetaking & writing papers & essays.	SAT 600V, 700 M WJ Math 127 WJ Writing 92	Organization & time management strategies	GPA went from 1.7 to 1.0	No Improvement. No motivation, emotional problems, reported he was doing well in class & was not (lying or lack of perception?).	Received 1.0 GPA and 2.1 GPA in following semesters and was placed on academic suspension.
98s2 JMU Female Academic probation for 4 semesters (Same as 98f13)	ADHD, anxiety disorder, communication disorder. Problems with lectures, reading texts, & organizing writing.	WAIS 99VIQ, 118 PIQ WJ Reading 100 WJ Math 77	SCORE A for organizing writing, AWARE for notetaking, & RAP for reading	GPA went from 1.75 to 3.25 (A in World Civilization to replace previous F). Change from probation to good standing.	Improvement. Organized, motivated, use of many personal & campus resources, previous strategy training, strong relationship with tutor.	Good grades (2.8 GPA, 2.8 GPA and 3.28 GPA) for 3 semesters after intervention.
98s3 EMU Female	LD in math, ADHD. Problems with reading, spelling, grammar, understanding content, math, & time management.	WAIS 93 VIQ, 97 PIQ WJ Reading 95 (1 st GE) WJ Math 66 (5 th GE)	Time management. SCORE A, SCOPE, skimming & scanning, webbing for concepts, & grammar instruction	GPA went from 2.1 to 2.0	No improvement. Dependent on others to do work, missed sessions, refused to try to use strategies, limited cognitive ability, low academic skills, & limited academic foundation.	GPA was 2.1 for 1 st semester and 1.5 for 2 nd semester after tutoring indicating lack of improvement.
98s4 JMU Male	LD in writing, dysrhythmic disorder. No calendars or study plans. Problems with multiple choice tests & reading texts.	WAIS 111 VIQ, 122 PIQ Nelson Denny rate 18% WJ Writing Cluster 98	Time management, study & test taking strategies for philosophy & art courses, SQ3R, self questioning, note cards, ITFITS	GPA went from 2.0 to 3.2 (philosophy – B; art – B)	Improvement. Motivated, high cognitive skills, & strong relationship with tutor.	Maintained high grades for 4 semesters following intervention. Improvement maintained.

98s5 JMU Female	LD in expressive language & anxiety disorder. No study or test taking skills. Procrastinates	WAIS 102 VIQ, 100 PIQ	Time management, RAP, semantic mapping, & color coding	GPA went from 2.3 to 1.5	No improvement. Broke leg in middle of the semester & missed many classes. Social aspects of college more important than academics.	Received GPA of 3.0 and more each semester after intervention and graduated. May have benefited from intervention.
98s6 JMU Older student – dropped out of college for 3 years due to depression Female (Same as 98f12)	LD- language & written expression, Depressive Disorder. Problems understanding lectures, notetaking, & memorization for tests.	WAIS 108 VIQ, 136 PIQ	Notecards, concept mapping, & color coding for music course	GPA went from 2.0 to 2.5; (music – C)	Improvement. Concept mapping used her visual strengths. Had a personal relationship with tutor.	Maintained adequate grades (2.1 GPA, and 2.6 GPA) in subsequent semesters. Good grades in music major courses, but lower in other courses.
98s7 BRCC Home schooled Female	LD in reading comprehension, memory disorder, ADHD. Severe physical disabilities. Problems with test taking, reading comp & test anxiety.	WAIS 96 VIQ, 83 PIQ WJ Reading Comp 91 (8.3 GE) No social or emotional problems reported by psychologist	Self questioning, notecards, color coding, & graphic organizers	GPA went from 2.5 to 3.0	No improvement. Although grades improved, she did not use strategies. Tried to establish friendship with tutor & when rejected became passively resistant. Learned helplessness, cognitive limitations, poor academic foundation, social isolation.	
98s8 JMU Male	LD in math & written expression, Bipolar disorder. Problems with reading comp, time management, study skills, & notetaking.	SAT 1050 WAIS 81 VIQ, 75 PIQ ('94); 103 VIQ, 86 PIQ ('90). WJ Reading Comp – 98, 11 th GE; Broad Writing – 88, 7 th GE; Knowledge – 84, 7 th GE	Time management, RAP, Block & Hut, active chapter reading, & test taking strategies	GPA went from 2.4 to 2.5	No improvement. Refused to use time management strategies, pledging fraternity high priority, lack of motivation, psychological problems, low academic skills.	Received adequate grades for 4 semesters following intervention.

98s9 JMU Male Academic probation	LD in reading & written expression. Problems reading big words & attending to reading, & writing mechanics.	WAIS 111 VIQ, 126 PIQ	Note cards & self questioning strategies for science & SCORE A for English papers	GPA went from 1.6 to 2.0 (Eng – C, science – D)	No improvement. Grades improved, but did not use strategies. Used other resources, accommodations, & high cognitive skills.	Received poor grades for 4 semesters after intervention and was eventually placed on academic suspension.
98s10 BRCC Female	LD in language & math & anxiety disorder. Problems with test taking, study skills, reading comp & composing.	WAIS 81 VIQ, 100 PIQ SAT 260 V, 260 M WJ Comp 100 (12 th GE) WJ Calculation 84 (6 th GE)	Semantic mapping, color coding, self questioning, paraphrasing, note cards, time management, & anxiety reduction	GPA went from 2.0 to 2.5	Improvement. Motivated to learn strategies & become a more active learner.	
98s11 EMU Athlete Male (Same as 99s14)	LD in writing & OCD Problems with writing, good time management, & use of resources.	WAIS 99 FSIQ WJ Reading 100 WJ Dictation 81	SCORE A for writing papers in 3 classes, SCOPE for proofing, & webbing to organize ideas.	GPA went from 3.4 to 3.1 (B's in 3 courses involving writing)	No improvement. Although he received B's in writing courses, did not master basic writing skills (grammatical sentences) & understanding relationships (cause/effect).	Continued to achieve high grades after tutoring (3.3 GPA for 2 semesters).

For further information, contact Esther Minskoff, Ph.D., James Madison University, Special Education Program, MSC 1903, Harrisonburg, VA 22807, (540) 568-6787, minskoeh@jmu.edu.

JMU POSTSECONDARY GRANT
SUMMARY OF CASES

Fall, 1998 (N=13)

<i>Code</i>	<i>Disability</i>	<i>Test Scores</i>	<i>Intervention</i>	<i>Outcome</i>	<i>Comments</i>	<i>Follow-up</i>
98f1 JMU Male Athlete Academic probation (Same as 99s7)	LD in reading, writing, & math. Problems with study & test taking skills, reading comp, & writing.	WAIS 89 VIQ, 108 PIQ WJ Word Ident 78 WJ Comp 89 WJ Dictation 73	Time management, RAPS, notecards, & highlighting	GPA went from 2.0 to 1.8	No improvement. Sporadic attendance, showed mastery of strategies, but no independent usage. Low cognitive skills. Primary interest in sports.	1 st semester after tutoring, he did not obtain good grades. 2 nd semester after tutoring, he obtained good grades and was able to move his GPA to over 2.0. This is attributed to the fact that most of the courses were in his major.
98f2 JMU Female Academic Suspension (Same as 99s4)	LD in reading & writing. Problems with study & test taking skills, reading comp, & writing.	SAT 980 combined WAIS 102 VIQ, 97 PIQ WRAT Reading 85 WRAT Math 94 WRAT Spelling 89	Time management, use of library resources, RAP-Q, COPS, & CRAM	GPA went from 1.5 to 3.3. Change to good standing	Improvement. Highly motivated Mastered & generalized all strategies.	Received adequate grades for 2 semesters after tutoring (3.2 GPA and 2.1 GPA).
98f3 BRCC Male	ADHD. Problems with reading comp, time management, & organizing ideas for writing.	WAIS 106 VIQ, 105 PIQ WJ Ident 99 WJ Comp 99 WJ Calculation 108	Wheels of literature for mapping for American Lit, word sorts for Soc, 10 steps of writing, & CRAM	GPA went from 3.0 (11 credits) to 3.3 (16 credits)	Improvement. Motivated & organized.	
98f4 JMU Academic probation Male Transfer from cc (Same as 99s2)	LD Problems with study & test taking skills, reading comp, writing, anxiety, & low self confidence.	WJ Broad Cognitive 97 WJ Ident 92 WJ Comp 97 WJ Dictation 83	Time management, test taking, anxiety reduction, SQ3R, self questioning, mapping, focus on Ed course	GPA went from 1.7 to 2.6 (B in Ed) Change to good standing	Improvement. Motivated, strong relationship with tutor, first exposure to strategy training.	Received adequate grades for 3 semesters after tutoring (2.4 GPA, 2.0 GPA, and 2.8 GPA).

98f5 EMU Female First semester freshman	ADHD. Problems with math, attending, reading, & test taking.	WAIS 88 VIQ, 94 PIQ, 87 FFD WJ Ident 98 WJ Comp 98 WJ Calculation 91 WJ Dictation 82 WJ Writing Samples 87	Active chapter reading, SWH, CRAM, Cornell for test taking, & steps in writing	GPA 2.2 (Comp – B, Health – D+; Math – C; PE – D)	No improvement. Poor attendance. Said that she was “too lazy” to use strategies. No motivation. Low cognitive skills.	Maintained adequate grades for 2 semesters after tutoring (2.4 GPA and 2.1 GPA).
98f6 JMU Female Freshman (Same as 99s1)	LD in reading & math. Problems with test taking & study skills, memorizing, reading school & non-school materials, & writing.	PPVT 97 WJ Word Ident 86 WJ Comp 95 WJ Dictation 66 WJ Calculation 73	Textbook study methods, SWH, active chapter reading for history & health, word sorts, & why questions to learn vocabulary, 10 steps in writing process, CRAM	GPA 2.4 (His – C; Health – C; Eng – B+)	Improvement. Strongly motivated.	1 st semester after intervention GPA stayed at 2.4, but received an F in Music. 2 nd semester GPA was 1.7 with an F in Anatomy and a D in Philosophy. Her low academic skills are making it more difficult for her to meet the demands of the higher level courses.
98f7 JMU Female Academic probation (Same as 99s3)	ADHD & communication disorder. Problems with reading texts & taking tests.	WAIS 93 VIQ, 111 PIQ WJ Ident 97 WJ Comp 110 WJ Calculation 106	RAP-Q, notecards, color coding for psych texts, mapping & note cards for anatomy	GPA went from 1.8 to 1.9 (retake of anatomy and change from F to D; psych – C)	No improvement. Highly motivated & well organized. Lack of progress due to ADHD, limited cognitive skills to master anatomy content, & limited reading ability to meet text requirements.	Adequate grades maintained after tutoring (2.4 GPA).
98f8 JMU Transfer Male (Same as 99s5)	LD in reading & writing, “dyslexia” Problems with reading & writing.	WAIS 119 VIQ, 128 PIQ WJ Word Ident 87 WJ Comp 100 WJ Dictation 83 WJ Writing Samples 88 WJ Applied Problems 122	SQRW, STORE, RAP-Q, internet research for writing speeches	GPA 3.0	Improvement. Easily mastered strategies & generalized for different classes.	Received adequate grades for 2 semesters after tutoring (2.4 GPA and 3.4 GPA).
98f9 JMU Female	LD in math. Problems with time management, test taking, & study skills.	WAIS 111 VIQ, 110 PIQ	Strategies for time management, concept mapping	GPA went from 2.8 to 2.4	No improvement Difficulty finding strategy that she “liked.”	Grades improved after tutoring.

98f10 JMU Academic probation Male	ADHD. Problems with time management, attention, studying, notetaking, & insomnia.	WAIS 135 VIQ, 116 PIQ Anit 19 OA 18 Info 16 Digit Symbol 7	Concept mapping used because of his love of art; time management, notetaking strategies	GPA went from 1.7 to 3.2. Change to good standing	Improvement. High cognitive ability led to quick mastery & generalization, checking in with tutor provided structure. Threat from parents to send him to all male school helped.	Received a 1.0 GPA the semester following intervention and was placed back on academic probation. He did not return to school. The reason is unknown.
98f11 JMU Male (Same as 99s6)	ADHD. Problems with reading comp, lectures, extreme distractibility, poor class attendance, no knowledge of use of library or resources.	WAIS 96 VIQ, 104 PIQ WJ Ident 109 WJ Comp 101 WJ Calculation 101	Time management, study skills, & RAP	GPA went from 1.1 to 2.8 (inconsistent grade from one semester to another in all previous semesters (from 1.1 to 2.8)	No improvement. Grades improved, but no use of strategies because he did not want to change his ways. Use of Prozac & Ritalin seemed to help.	Grades improved after tutoring. May have been due to medication.
98f12 JMU Female (Same as 98s6)	LD in language & written expression. Depressive Disorder. Problems understanding lectures, notetaking, & memorization for tests.	WAIS 108 VIQ, 136 PIQ	Concept mapping for 2 music courses	GPA from 2.5 to 3.2 (music – A-, music – B). Quote from music prof: “Nothing makes teaching more worthwhile than for a student to show the type of progress you show here. Thanks for your persistence & congrats to you & your tutor.”	Improvement. Improved Strengthened use of strategies with second semester of tutoring.	Maintained adequate grades (2.1 GPA and 2.6 GPA in subsequent semesters). Good grades in music courses, but lower in other courses.

98113 JMU Female (Same as 98s2)	ADHD, anxiety disorder, & communication disorder. Problems with lectures, reading texts, & organizing writing.	WAIS 99 VIQ, 118 PIQ WJ Reading 100 WJ Math 77	Color coding & mnemonics, Cornell for notetaking, test taking	GPA went from 3.25 to 2.0 (all C's). Still in good standing.	Improvement. Maintained. Although grades dropped, she worked hard to apply strategies despite frustration over amount of work required. Strong relationship with tutor helped her continue.	Received good grades (2.8 GPA, 2.8 GPA and 3.28 GPA) for 3 semesters after intervention).
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JMU POSTSECONDARY GRANT SUMMARY OF CASES

Spring, 1999 (N=16)

<i>Code</i>	<i>Disability</i>	<i>Test Scores</i>	<i>Intervention</i>	<i>Outcome</i>	<i>Comments</i>	<i>Follow-up</i>
99s1 JMU Female (Same as 98f6)	LD in reading & math. Problems with test taking & study skills, memorizing, reading school & non-school materials, & writing.	PPVT 97 WJ Word Ident 86 WJ Comp 95 WJ Dictation 66 WJ Calculation 73	Time management, COPS, RAP-Q, Cornell notetaking, & self advocacy	GPA went from 2.4 to 2.4	Improvement maintained. Strong motivation & close relationship with tutor contributed to success. She mastered self advocacy skills & was able to resolve a conflict situation with a professor.	1 st semester after intervention GPA stayed at 2.4, but received an F in Music. 2 nd semester GPA was 1.7 with an F in Anatomy and a D in Philosophy. Her low academic skills are making it more difficult for her to meet the demands of the higher level courses.
99s2 JMU Male (Same as 98f4)	LD. Problems with study & test taking skills, reading comp, writing, anxiety, & low self confidence.	WJ Broad Cognitive 97 WJ Ident 92 WJ Comp 97 WJ Dictation 83	Time management, concept mapping & notecards, CRAM, RUSC, & self advocacy	GPA went from 2.6 to 2.4	Improvement maintained. Strong motivation & close relationship with tutors who monitored him closely contributed to success. He mastered self advocacy skills & was able to better relate to professors.	Received adequate grades for 3 semesters after tutoring (2.4 GPA, 2.0 GPA, and 2.8 GPA).
99s3 JMU Female Academic probation (Same as 98f7)	ADHD & communication disorder. Problems with reading texts & taking tests.	WAIS 93 VIQ, 111 PIQ WJ Ident 97 WJ Comp 110 WJ Calculation 106	Organization, mapping, math word problems, & Cornell notetaking	GPA went from 1.9 to 2.2. Change to good standing.	Improvement. No improvement was noted at the end of the previous semester, but a second semester of tutoring & strong tie to tutor seem to have contributed to her increased mastery of strategies	Adequate grades maintained after tutoring (2.4 GPA).

99s4 JMU Female (Same as 98f2)	LD in reading & writing. Problems with study & test taking skills, reading comp, & writing.	SAT 980 combined WAIS 102 VIQ, 97 PIQ WRAT Reading 85 WRAT Math 94 WRAT Spelling 89	CRAM, RAP-Q, & Cornell notetaking	GPA went from 3.3 to 3.3	Improvement. Strong motivation & close ties to tutor contributed to success.	Received adequate grades for 2 semesters after tutoring (3.2 GPA and 2.1 GPA).
99s5 JMU Male (Same as 98f8)	LD in reading & writing, "dyslexia" Problems with reading & writing.	WAIS 119 VIQ, 128 PIQ WJ Word Ident 87 WJ Comp 100 WJ Dictation 83 WJ Writing Samples 88 WJ Applied Problems 122	Time management, RAP-Q, essay outlining, & proofreading	GPA went from 3.0 to 2.9	Improvement maintained. Strong motivation, close tie with tutor, high level of intelligence, & previous strategy training.	Received adequate grades for 2 semesters after tutoring (2.4 GPA and 3.4 GPA).
99s6 JMU Male (Same as 98f11)	ADHD. Problems with reading comp, lectures, extreme distractibility, poor class attendance, & no knowledge of use of library or resources.	WAIS 96 VIQ, 104 PIQ WJ Ident 109 WJ Comp 101 WJ Calculation 101	Use of the library was taught (could not learn from manual), outlining, test taking, RAP, CRAM, & time management	GPA went from 2.8 to 1.8	No improvement. Refused to use strategies to overcome attentional problems. Resistant or unable to change cognitive style, high anxiety, & emotional problems.	Grades improved after tutoring. May have been due to medication.
99s7 JMU Male Academic probation (Same as 98f1)	LD in reading, writing, & math. Problems with study & test taking skills, reading comp, & writing.	WAIS 89 VIQ, 108 PIQ WJ Word Ident 78 WJ Comp 89 WJ Dictation 73	RAP, CRAM, time management, notetaking, & attention strategies	GPA went from 1.8 to 1.9	No improvement. Attendance improved, but no motivation for academics, only for soccer. Limited verbal abilities, low academic levels, & low academic self concept contributed to his lack of mastery.	1 st semester after tutoring, he did not obtain good grades. 2 nd semester after tutoring, he obtained good grades and was able to move is GPA to over 2.0. This is attributed to the fact that most of the courses were in his major.
99s8 JMU Transfer from cc Male Academic suspension	LD in reading & anxiety disorder. Problems with reading of text & non-text materials, study skills & test taking skills, & writing organization.	WAIS 109 VIQ, 96 PIQ WJ Ident 100 WJ Comp 93 WJ Calculation 100	RAP, CRAM, & notetaking	GPA went from 1.5 to 3.3. Change to good standing.	Improvement. Strong motivation & close tie with tutor.	Follow-up GPAs were 2.4 for each of the 2 semesters following tutoring indicating that he was able to maintain the improvement he made with the project.

99s9 JMU Female	LD & anxiety disorder. Avoidant, dependent, & self defeating personality. Problems with reading, study skills, understanding lectures, composing, & mechanics.	WAIS 89 VIQ, 86 PIQ (Comprehension 6, Block Design 4, Coding 7). SAT 330 V 380 M WJ Reading 93 (9 th GE) WJ Math 77 (6 th GE) WJ Writing 100 (11 th GE)	RAP-Q, organization, Cornell notetaking, & use of library & internet.	GPA went from 2.7 to 2.6	No improvement. Did not master or use strategies because extremely dependent on others who helped her more. Low cognitive & academic skills, & emotional problems.	1 st semester after intervention, GPA was 2.4 and 2 nd semester GPA was 1.5. Major difficulty with more advanced courses.
99s10 JMU Academic probation Male (Same as 99f1)	LD. Problems with reading, composing, & test taking.	WAIS 118 VIQ 120 PIQ WJ Reading 109 WJ Math 118 WJ Writing 92	Time management, test taking, RAP-Q, & Cornell notetaking	GPA went from 0.9 to 2.0	Improvement. High cognitive skills helped him master strategies. He became sick & had to leave school toward the end of the semester which limited the effectiveness of the intervention	1 st semester after intervention, received a 3.2 GPA and 1.2 GPA the next semester. Factors involved in this drop in grades are not known.
99s11 BRCC Male	LD in writing, language disorder, & ADHD Problems with reading, writing, & lectures.	WAIS 88 VIQ 106 PIQ (Vocabulary 5) WJ Ident 95 (9 th GE) WJ Comp 100 (12 th GE) WJ Calculation 88 (7 th GE)	Time management, CRAM, RAP-Q, COPS, PLEASE, & concept mapping	GPA 3.0. No previous GPA because he took remedial courses in first semester.	Improvement. He mastered test taking, time management, & writing strategies, but not reading and mapping because of limited reading & verbal abilities.	
99s12 EMU Athlete Musician Male	LD & communication disorder. Problems with test taking & reading comp. Self report contradicts test results & psychologist's observations (e.g., good in math & understanding lectures).	WAIS 91 VIQ 105 PIQ (Arith 6, Info 6) WJ Ident 108 (16 th GE) WJ Comp 91 (10 th GE) WJ Calculation 83 (8 th GE)	Time management, test taking, & writing papers	GPA went from 2.8 to 2.9	No improvement. Did not master strategies because intervention started in mid-semester & because of his cognitive processing deficits in understanding language.	Maintained adequate grades for the semester following intervention.

99s13 EMU Male Older student	Communication disorder. Problems with memorizing, time management, distracted, reading, & writing mechanics.	WAIS 97 VIQ 109 PIQ WJ Ident 92 WJ Comp 95 WJ Calculation 113	Concept mapping, color coding, notecards, RAP-Q, time management, & memorizing strategies	GPA went from 2.5 to 2.6	No improvement. He did not want to devote time & cognitive effort to learning strategies. Preferred to depend upon accommodation of books on tape rather than work on reading comp.	Improvement maintained. Received adequate grades (2.3 GPA) for the semester after intervention.
99s14 EMU Male (Same as 98s11) He was out of school for previous semester	LD in writing & OCD. Problems with writing, time management, & use of resources.	WAIS 99 FSIQ WJ Reading 100 WJ Dictation 81	RAP-Q & SLAMM for reading & studying	GPA went from 3.1 to 3.1	No improvement. He did not like the strategies because they required him to read slowly which he did not like, perhaps because of his superficial cognitive style.	Continued to achieve high grades after tutoring (3.3 GPA for 2 semesters).
99s15 JMU Female Transfer from cc	LD in math & ADHD. Problems with test taking, memorizing, & writing mechanics	WAIS 96 VIQ 108 PIQ WJ Ident 113 WJ Comp 113 WJ Calculation 86	CRAM, notecards, & RAP. Much focus on cartography course	GPA 3.0 (A in cartography) (no previous grades because he was a transfer).	Improvement. Started tutoring in mid- semester so limited benefit. Strong motivation & strong tie with tutor.	Continued to maintain good grades for 2 semesters after intervention.
99s16 JMU Female	LD in written expression & ADHD. Problems with finding details in reading because of ADHD & proofreading.	WAIS 122 VIQ 114 PIQ WJ Reading 110 (16 th +) WJ Math 98 (14 th) WJ Writing 86 (11 th) WJ Dictation 79 (8 th GE)	SCOPE for proofreading, organizing papers, & RAP-Q for reading details	GPA went from 3.5 to 3.5	Improvement. Benefited because of strong motivation to learn strategies because she planned to be sped teacher, strong tie with tutor, & high cognitive ability.	Graduated.

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JMU POSTSECONDARY GRANT SUMMARY OF CASES

Fall, 1999 (N=11)

Code	Disability	Test Scores	Intervention	Outcome	Comments	Follow-up
99f1 JMU Male Academic probation (Same as 99s10)	LD. Problems with reading, composing, & test taking.	WAIS 118 VIQ, 120 PIQ WJ Reading 109 WJ Math 118 WJ Writing 92	Time management, RAP-Q, & self advocacy	GPA went from 2.0 to 3.2. Change from academic probation to good standing for first time in college.	Improvement. Additional time for strategy instruction may have contributed to success & close relationship with tutor.	1 st semester after intervention, received a 3.2 GPA and 1.2 GPA the next semester. Factors involved in this drop in grades are not known.
99f2 EMU Male Older student (Same as 99s13)	Communication disorder. Problems with memorizing, time management, distraction, reading, & writing mechanics.	WAIS 97 VIQ, 100 PIQ WJ Identification 92 WJ Comprehension 95 WJ Calculation 113	SQ3R, CRAM, DARE, time management, & speed reading	GPA went from 2.6 to 2.5	Improvement. Although GPA remained the same, became less dependent on accommodations (e.g. taped books) & more self confident in trying independent strategies.	Improvement maintained. Received adequate grades (2.3 GPA) for the semester after intervention.
99f3 JMU Male Academic suspension (Same as 00s1)	LD in reading & writing. Difficulty with time management, writing, & reading.	WAIS 107 VIQ, 116 PIQ WJ Broad Reading 106 Broad Math 119 Broad Writing 102	CRAM, & notecards	GPA went from 1.2 to 2.5 Went from academic suspension to good standing.	Improvement. Motivated, intelligent, & good relationship with tutor.	
99f4 JMU Male Academic probation	ADHD & Depression. Time management, attention to reading, & classroom attention problems.	WAIS 142 VIQ, 117 PIQ	Time management strategies & test taking strategies	GPA went from 2.1 to 1.5. Stayed on academic probation.	No improvement. Problems with depression prevented him from benefiting.	He withdrew from all classes the following semester.

99f5 JMU Male Academic suspension	ADHD & math disability. Time management, attention to reading, & poor test taking skills.	WAIS 127 VIQ, 117 PIQ	Time management, CRAM for test taking, concept mapping, & RAP-Q	GPA went from 0.8 to 2.0. Went from academic suspension to academic probation.	Improvement. Motivated, & strong relationship to tutor.	Improvement not maintained. He received an F and an A in the 2 courses he took the semester following intervention.
99f6 JMU Male	LD in writing. Deficits in writing, notetaking, & memorizing, & reading comprehension.	WAIS 112 VIQ, 111 PIQ SAT 500 V 580 M WJ Broad Reading 122 WJ Broad Math 134 WJ Dictation 92	Comell method for notetaking, note-cards & graphic organizers, & time management	GPA went from 2.2 to 2.5	Improvement Motivated, & strong relationship to tutor.	Transferred.
99f7 JMU Male Academic probation	ADHD & reading disorder. Deficits in reading & writing.	WAIS 101 VIQ 107 PIQ WRMT Skills Cluster 94, 9.5GE Comprehension Cluster 93, 10.7 GE	So We Go C for word ident, analysis of text organization for reading comp, & metacognitive awareness	GPA went from 1.2 to 3.5. Went from academic probation to good standing.	Improvement. Motivation, close relationship with tutor, & outstanding teaching by tutor.	Improvement maintained in the semester after intervention (2.5 GPA).
99f8 EMU Male Academic probation (Same as 00s9)	LD in math. Deficits in time management, test taking, & reading texts.	WAIS 94 VIQ 90PIQ WJ Word Ident 91 WJ Comp 100 WJ Calculation 78	Time management, FRAMER for studying, & notetaking from texts	GPA went from 1.5 to 1.8	No improvement. Limited abstract thinking abilities, learned helplessness, & well-ingrained time management problems that he could not or would not overcome.	
99f9 EMU Female	ADHD. Time management, difficulties with lectures, test taking, & writing.	WAIS 110 VIQ 98 PIQ WJ Word Ident 102 WJ Comp 129 WJ Math 96	Time management, SQ3R, & FRAMER	GPA 2.2 (first semester freshman so no previous grades)	No improvement. Improper dosage of medication & lack of motivation.	Grades decreased (1.6 GPA) indicating continuing problems.
99f10 JMU Male Academic Suspension	LD in writing & reading. Extreme problems with writing & reading. No organization or time management.	WAIS 118 VIQ, 128 PIQ WJ Broad Read 91 WJ Broad Math 97 WJ Broad Writing 77 Dictation 65	Time management, & organization	GPA .32 to .00 (F's in his 2 courses)	No improvement. No motivation for school. Only interest in social aspects. Missed sessions, & was unprepared.	

99/11 EMU Male Older student Part of a voc rehab program	Neuropsychological problems (unspecified).	WAIS 102 FS	Time management, Cornell for note- taking, & stress management	GPA 2.8 (transfer from CC so no previous grades)	No improvement. Although GPA was good, tutor did not believe that he used strategies because of high anxiety & emotional problems.	Adequate grades maintained for semester after tutoring.
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JMU POSTSECONDARY GRANT SUMMARY OF CASES

Spring, 2000 (N=9)

<i>Code</i>	<i>Disability</i>	<i>Test Scores</i>	<i>Intervention</i>	<i>Outcome</i>	<i>Comments</i>
00s1 JMU Male (Same as 99f3)	LD in reading & writing. Difficulty with time management, writing & reading.	WAIS 107 VIQ, 116 PIQ WJ Broad Reading 106 Broad Math 119 Broad Writing 102	SCOPE & SCAN for writing papers, notetaking, & use of electronic databases	GPA went from 2.5 to 2.5 (Health - B, Health - C, & 3 incompletes)	Improvement maintained. Became very ill at the end of the semester & had to take 3 incompletes.
00s2 JMU Male	ADHD & LD in math. Problems with organization, notetaking, & reading comprehension.	WAIS 103 VIQ, 119 PIQ Digit Span 6 Arithmetic 7	RAP-Q for reading comprehension for telecom. course, Cornell for notetaking, TREE for writing paper, & stress reduction	GPA went from 2.7 for 13 hours to 2.3 for 18 hours, (C in telecom course)	Improvement. Although grades were lower, she took more hours & harder courses.
00s3 JMU Male Academic probation	ADHD. Problems with study skills & test taking skills.	None available	Organization using notebooks & calendars, Cornell for notetaking, time management, & So We Go C for vocabulary	GPA went from 1.1 to 1.0. Academic suspension	No improvement. Not motivated & belief that medication for ADHD was sufficient for helping him hindered his progress.
00s4 JMU Female Academic probation	LD in auditory perception & memory, Diabetes, & Clinical depression. Problems with attending & reading comprehension.	WAIS VIQ- superior range; PIQ - high average. WJ-R Word Ident 111, Comp 124, Calculation 133, Writing 117, Dictation 92	RAP-Q for reading comp, study plan, anxiety reduction, mnemonics, & self awareness	GPA went from 1.2 to 2.1 Academic suspension because 1.8 Cum	No improvement. Although grades improved, she did not use strategies.
00s5 JMU Male	LD in reading, math, & written expression. Problems with organization, time management, attendance, test taking, reading, & writing.	WAIS 114 VIQ, 121 PIQ WJ Reading 91, 7.7 Math 95, 8.7 Writing 97, 6.4	REAP for reading stat, & SCOPE for writing papers	GPA went from 2.5 to 1.0. Academic suspension	No improvement. Due to severe academic disabilities, poor attendance, lack of study & test taking skills.

00s6 JMU Male Athlete Academic probation	LD in written expression & visual motor integration. Problems with time management & test taking.	WAIS 113 VIQ, 109 PIQ	Time management, & SLAMM for memorization for tests	GPA went from 0.6 to 0.7 Academic suspension.	No improvement. Tutoring started in the middle of the semester, & too little time for studying because of athletic commitments and social activities.
00s7 JMU Male Academic probation	ADHD. Problems with organization, test taking, & written expression. Does not take notes in classes.	WAIS 133 VIQ, 113 PIQ WJ Word Ident 98 Comprehension 139 Word Attack 76 Calculation 107 Writing Samples 93	Organization & poor attendance	GPA went from 1.0 to 0.5. Academic suspension.	No improvement. Did not attend classes or tutoring sessions, did not take his medication, lack of motivation for college, learned helplessness, & family issues.
00s8 JMU Male Academic probation	LD (unspecified). Problems with time management & organization.	WAIS 107 VIQ, 116 PIQ WJ Word Ident 83 Comprehension 95 Calculation 103	Time management, study plans, RAP-Q, & notecards	GPA went from 1.1 to 2.1. Academic probation.	Improvement. Success of time management & organization strategies. Change of major to one more suited to interests & abilities.
00s9 EMU Male (Same as 99f8)	LD in math. Deficits in time management, test taking, & reading texts.	WAIS 94 VIQ, 9 PIQ WJ Word Ident 91 WJ Comp 100 WJ Calculation 78	BORE for writing answers on essay tests, POWER for outlining papers, COPS for proofing & concept mapping.	GPA went from 1.8 to 2.2	Improvement. Second semester of intervention may have contributed to improvement, use of strategies, and support of tutor.

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